Remarks

This application has been reviewed in light of the Final Office Action of June 28, 2005. Claims 1-20 are pending, and all claims are rejected. In response, the following remarks are submitted. Reconsideration of this application is requested.

Applicant incorporates the remarks of the prior Amendment.

This Office Action is improperly made final. Claims 1, 2, 5-12, and 15-20 are newly rejected on the basis of obviousness-type double patenting, and these claims were not previously amended.

Regarding the interpretation of the claim language, Applicant adheres to the plain meaning of the claim language and to its legal interpretation, as discussed earlier.

Claims 1, 2, 5-12, and 15-20 are rejected under the doctrine of obviousness-type double patenting over claims 14-18 of US Patent 6,887,588. Applicant traverses this ground of rejection.

Claim 1 and 12 recite in part:

> "the stabilization composition comprises a first element selected from Group 2 or Group 3 of the periodic table, and a second element selected from Group 5 of the periodic table".

Claim 20 recites in part:

> "the sintering-inhibitor region comprises a first element selected from Group 2 or Group 3 of the periodic table, and a second element selected from Group 5 of the periodic table".

All of the rejected claims therefore include a limitation on the selection of first and second elements from the two recited subgroups.

Claims 14-18 of the '588 patent have no such teaching, as acknowledged by the explanation of the rejection. A teaching of the selection of one or more of a list of elements is not the same as a teaching that a first element must be selected from one subgroup and a second element must be selected from a second subgroup.

As acknowledged by the explanation of the rejection, claims 14-18 do not teach that the material is a ceramic such as yttria-stabilized zirconia (claims 5, 12, and 15-19), or that the substrate is a nickel-base superalloy (claims 2 and 12-19). The explanation of the rejection relies on "well known" prior art or the like, in this case "well known" and "commonly known" prior art. "Well known" and "commonly known" are not classes of statutory prior art recognized in 35 USC 102 or 35 USC 103. Applicant traverses this substitution of asserted "well known" and "commonly known" prior art for a statutory prior art reference as applied in the context of the claim. Here, the matters asserted to be "well known" and "commonly known" are not, in this context. Applicant requests that, if the rejection is maintained, the Examiner apply a statutory prior art reference and set forth a rejection that incorporates the statutory prior art. MPEP 2144.03. Absent such an application of statutory prior art in the statement of the rejection, Applicant requests that the rejection be withdrawn.

Claims 14-18 of US Patent 6,887,588 do not teach the language "the atomic ratio of the amount of the first element to the amount of the second element is at least 1:3" found in all of the rejected claims. The explanation of the rejection relies on "routine experimentation" to supply this limitation (page 4, lines 2-5. As noted in MPEP 2144.05 II B, "A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation." This mandate, which is supported in the cited MPEP section by citations to the case authority, means that the prior art must first recognize that a particular parameter should be optimized before its optimization is a matter of routine experimentation. This position of the MPEP makes good sense. If the nature of the invention includes first recognizing that a particular parameter may be optimized to achieve desirable results in the claimed subject matter, then the subsequent optimization cannot be a matter of routine. In this case, the prior art does not recognize that the ratio of the amount of the first element to the amount of the second element is a result effective variable. Accordingly, the double patenting rejection may not be made.

Applicant asks that the Examiner reconsider and withdraw this ground of rejection.

Claims 1-20 are rejected under 35 USC 103 as unpatentable over Ackerman US 2003/0059633 (the publication corresponding to issued patent 6,887,588, which is the basis of the double-patenting rejection). Applicant traverses this ground of rejection.

The following principle of law applies to all sec. 103 rejections. MPEP 2143.03 provides "To establish prima facie obviousness of a claimed invention, all claim limitations must be taught or suggested by the prior art. In re Royka, 490 F2d 981, 180 USPQ 580 (CCPA 1974). All words in a claim must be considered in judging the patentability of that claim against the prior art. In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)." [emphasis added] That is, to have any expectation of rejecting the claims over a single reference or a combination of references, each limitation must be taught somewhere in the applied prior art. If limitations are not found in any of the applied prior art, the rejection cannot stand. In this case, the single applied prior art reference clearly does not arguably teach some limitations of the claims.

Claim 1 and 12 recite in part:

> "the stabilization composition comprises a first element selected from Group 2 or Group 3 of the periodic table, and a second element selected from Group 5 of the periodic table."

Claim 20 recites in part:

> "the sintering-inhibitor region comprises a first element selected from Group 2 or Group 3 of the periodic table, and a second element selected from Group 5 of the periodic table."

All of the rejected claims therefore include a limitation on the selection of first and second elements from the two recited subgroups.

The '633 publication has no such teaching, as acknowledged by the explanation of the rejection. A teaching of the selection of one or more of a list of elements is not the same as a teaching that a first element must be selected from one subgroup and a second element must be selected from a second subgroup.

Each of claims 1, 12, and 20 recites in part:

"the atomic ratio of the amount of the first element to the amount of the second element is at least 1:3"

The explanation of the rejection (page 6, last full paragraph on page) recognizes that Ackerman does not teach this limitation. In the paragraph bridging pages 7-8 of the Final Office Action, "routine experimentation" is asserted, for the reason that "...Ackerman teaches that when mixtures are used, the other requirements set forth in the patent must be met..." Whatever Ackerman teaches, it does not anywhere teach that "the atomic ratio of the amount of the first element to the amount of the second element is at least 1:3." Neither para. [0034] nor any other location in Ackerman has such a teaching.

As noted in MPEP 2144.05 II B, "A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation." This mandate, which is supported in the cited MPEP section by citations to the case authority, means that the prior art must first recognize that a particular parameter should be optimized before its optimization is a matter of routine experimentation. This position of the MPEP makes good sense. If the nature of the invention includes first recognizing that a particular parameter may be optimized to achieve desirable results in the claimed subject matter, then the subsequent optimization cannot be a matter of routine. In this case, the prior art does not recognize that the ratio of the amount of the first element to the amount of the second element is a result effective variable. Accordingly, the concept of "routine experimentation" is not applicable here, and the prior art does not teach the limitations of any of the rejected claims.

Applicant asks that the Examiner reconsider and withdraw this ground of rejection.

Claims 1-12 and 14-20 are rejected under 35 USC 103 over Subramanian US Patent 6,677,064. Applicant traverses this ground of rejection.

Applicant incorporates the prior discussion of the rejection over Ackerman. The same legal and factual issues apply, in view of the recognition in the second paragraph of page 10 of the Final Office Action that Subramanian does not teach the atomic ratio limitation. Subramanian's teaching at col. 7, lines 10-20 and elsewhere has nothing to do with the recited ratio, and does not suggest this ratio as a result-effective variable.

Applicant asks that the Examiner reconsider and withdraw this ground of rejection.

Claim 13 is rejected under 35 USC 103 over Subramanian '064 in view of Taylor US patent 5,520,516. Applicant traverses this ground of rejection.

Applicant incorporates the prior discussion of the rejection over Subramanian. Subramanian does not teach the limitations of claim 12, the parent claim, and Taylor adds nothing in this regard.

Further, claim 12 recites in part:

"providing a nickel-base superalloy article that is a component of a gas turbine engine;
depositing a bond coat onto an exposed surface of the article; and
producing a thermal barrier coating on an exposed surface of the bond coat...".

As understood by Applicant, Taylor has no teaching of applying its thermal barrier coating to a nickel-base superalloy having a bond coat thereon. Taylor teaches that its thermal barrier coating is applied directly to the substrate, without a bond coat, except in the case of titanium substrates, see col. 5, lines 40-43.

Applicant asks that the Examiner reconsider and withdraw this ground of rejection.

Response to Examiner's arguments

In para. 5 and para. 12 of the Final Office Action, arguments are presented seeking to justify a reliance upon "routine experimentation." The arguments are not persuasive because the claim limitations are expressed in terms of the atomic ratio of "a first element selected from Group 2 or Group 3 of the periodic table" and "a second element selected from Group 5 of the periodic table." Claim 1, for example, recites that the "atomic ratio of the amount of the first element to the amount of the second element is at least 1:3." The thrust of the Examiner's basic argument is that it would be obvious to determine ratios of elements. This assertion sidesteps the fact that the claim range is not just to ratios of elements, but instead to ratios of specific classes of elements, specifically the atomic ratio of Group 2/Group 3 elements to Group 5 elements. Nothing in any of the references ascribes any significance to the Group 2, Group 3, or Group 5 elements, nothing suggests that Group 2 and Group 3 elements are to be lumped into a class for the purposes of analysis, nothing suggesting that Group 2/Group 3 or Group 5 elements have any significance as distinct from Group 1/Group 4 and Group 6 or Group 7 or trans-uranic or rare earth elements, and certainly nothing ascribes any significance to the numerical value

of the ratio of the Group 2/Group 3 elements to Group 5 elements (as distinct from sum, difference, product, square root, or any other numerical relationship that they might have). This is what the MPEP means when it speaks of "result-effective variable"--to be the subject of routine experimentation the prior art would have had to recognize that the ratio of Group 2/Group 3 to Group 5 elements was important to determining properties, so that a person of ordinary skill would have been directed to conduct experiments on that result-effective variable. None of the prior art of record identifies the result-effective variable that is the subject of the present claims.

There is also a reference by the Examiner to the applicant merely recognizing "another advantage." (Final Office Action at page 12). Applicant does not understand the Examiner's position here. The issue is whether the art teaches a claimed range of Group 2/Group 3 to Group 5 elements, and there is nothing in the references suggesting that.

Lastly, it is argued that Applicant has made no showing that the claimed ranges are critical. Applicant is not required to make any showing until a prima facie ground of rejection is stated, and there has been none so far. Applicant discovered that the ratio of certain classes of elements has significance, and has recited the invention in terms of the critical value of that ratio. No prior art of record has even identified the classes of elements as having any significance, much less suggested a critical value.

CONCLUSION

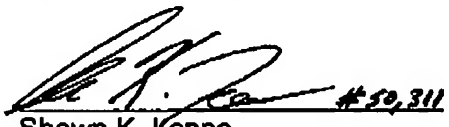
In view of the above, Applicant respectfully requests reconsideration of the Application and withdrawal of the outstanding objections and rejections. As a result of the amendments and remarks presented herein, Applicant respectfully submits that claims are not anticipated by nor rendered obvious by the cited art either alone or in combination and thus, are in condition for allowance. As the claims are not anticipated by nor rendered obvious in view of the applied art, Applicant requests allowance of all pending claims in a timely manner. If the Examiner believes that prosecution of this Application could be expedited by a telephone conference, the Examiner is encouraged to contact the Applicant.

This Response has been filed within three (3) months of the mailing date of the Final Office Action and it is believed that no fees are due with the filing of this paper. In the event that Applicants are mistaken in their calculations, the Commissioner is hereby authorized to deduct any fees determined by the Patent Office to be due from the undersigned's Deposit Account No. 50-1059.

Respectfully submitted,

Dated: July 25, 2005

McNees Wallace & Nurick LLC



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